L.E. FLETCHER TECHNICAL COMMUNITY COLLEGE
310 Saint Charles Street
Houma, La. 70360

Introductory Physical Science
Syllabus

Course Number: 1000
Course Title: Introductory Physical Science
Credit Hours: 3/0/3 (Lecture/Lab/Total)
Contact Hours: 45

Course Description:

An interdisciplinary approach to the laws and principles of chemistry and physics applied to matter and energy.

Prerequisite: None

Course goals: Students will develop an understanding of:

- Scientific inquiry.
- Mathematics and measurement systems used by the scientific community.
- Properties and changes of properties of matter.
- Motion and forces.
- Transformation of energy.

Course Objectives: Upon the completion of this course students will:

- Develop models and predictions using the relationship between data and explanations.
- Compare alternative explanations and predictions.
- Communicate scientific procedures, information and explanations.
- Demonstrate Safety procedures during scientific investigation.
- Describe and graph the motions of objects
- Identify the different forces and their effects (gravity, electrical, magnetic).
- Explain when an object is not being subjected to a force, it will continue to move at a constant speed and in a straight line.
- Describe how forces acting on an object will reinforce or cancel one another, depending upon their direction and magnitude.
- Explain that unbalanced forces will cause changes in the speed or direction of an object's motion.
- Compare properties of different substances that are independent of the amount of the substance.
- Infer relationships among temperature, molecular motion, phase changes, and physical properties of matter.
- Describe the movement of heat and effects of heat in objects and systems.
- Identify and compare the characteristics of different types of energy.
- Explain the different kinds of energy transformation and explain the fact that energy can be neither destroyed nor created.
- Describe the types of energy that can be involved, converted, or released in electrical circuits.

- Compare the uses of different energy resources and their effects upon the environment.
- Identify questions that can be used to design a scientific investigation.
- Recognize that mathematics, technology, and scientific techniques used in an experiment can limit or enhance the accuracy of a scientific investigation.
- Design and conduct a scientific investigation.
- Use mathematics and appropriate tools and techniques to gather, analyze, and interpret data.

Required Text: Physical Science seventh edition by Bill W. Tillery

Supplementary Reading: (Will be assigned as needed)

Course Outline:

What is science? (Chapter 1)

- Objects and properties
- Quantifying properties
- Measurement Systems
- Standard units for the metric system
- Metric Prefixes
- Understandings from measurements
- The nature of science

Motion (Chapter 2)

- Describing motion
- Measuring motion
- Forces
- Horizontal motion on land
- Falling Objects
- Compound motion
- Three laws of motion
- Momentum
- Forces and circular motion
- Newton's Law of Gravitation

Energy (Chapter 3)

- Work
- Motion, positions, and energy
- Energy flow
- Energy sources today

Heat and Temperature (Chapter 4)

- The Kinetic Molecular Theory
- Temperature
- Heat
- Energy, heat, and Molecular Theory
- Thermodynamics

Wave Motions and Sound (Chapter 5)

- Forces and elastic materials
- Waves
- Describing waves
- Sound waves
- Energy and sound
- Sources of sounds

Electricity (Chapter 6)

- Electric Charge
- Electric current
- Magnetism
- Electric currents and magnetism
- Electromagnetic induction

Light (Chapter 7)

- Sources of light
- Properties of light
- Evidence for waves
- Evidence for particles
- The present theory

Evaluation: Four tests will be given. Each test will count for 25 % of the final grade. All tests will be comprehensive.

Grading:

A = 90-100% B = 80-89% C = 70-79% D = 60-69% F = 59%-↓ I = Incomplete W = Withdraw
(See Student Handbook for complete grading scale and definitions.)
Final date to drop with a W is Oct. 30, 2006.

Attendance: You are expected to attend all classes. If an absence occurs, it is the responsibility of the student to make up all work missed. I will track your attendance carefully and adhere to school policies regarding excessive absences. I will consider excuses on a case by case basis. These excuses must be submitted to me within three days of your return to school. (See Student Handbook guidelines specific to Attendance Policy.)
NOTE: One point for each unexcused absence from class will be subtracted from your final average.

Class Interruptions / Disruptions: If you are more than 5 minutes late for class or leave before I dismiss class you will be recorded as absent. Cell phones, pagers, or any electronic communication devices that could distract the class from the lesson are to be turned **off** before entering the classroom. It is your responsibility to take your education seriously. If you disrupt class in any way you will be asked to leave and not return until you have seen me privately.

Class Participation: Expected. Students must apply appropriate terms and theories to actual or simulated situations presented in class. Individual and/or group work may be assigned at anytime during class at the discretion of the instructor. If you are absent from class, you cannot participate in class discussions and or the class work assigned and your final average may suffer (see Attendance).

Tests: Knowledge will be tested using multiple-choice question/response format predominantly, however; matching, listing, True and False, and constructed response formats may also be used as deemed appropriate to course content. Pop quizzes may be expected.

Extra Credit: Extra credit assignments may be given in instances where a student has not performed well using traditional paper and pencil tests. This will be used judiciously and on an individual basis only.

Missed Exams: Making up exams is strongly discouraged. If you miss an exam you must contact me personally to make arrangements. I will adhere to the exam make-up policy in your student handbook. Make-up exams may not resemble the exam being made up and may include additional constructed response questions.

Academic Integrity: Academic dishonesty which includes cheating, copying the work of a classmate, plagiarism, or practices contradictory to honest learning will be dealt with according to school policy. Expect to receive a failing grade for work presented and referral to the appropriate administrator for further disciplinary action. This could result in a failing grade for the course, dismissal from the course, or dismissal from school.

Students with Disabilities: Fletcher Technical Community College complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. Students with documented disabling conditions who seek accommodations must make their requests known to the Disabilities Coordinator at the beginning of each semester. If an Accommodation Plan is written, I will be more than happy to try to meet your needs in class.

Transfer of Course Credit: General education courses that are listed on the Louisiana Board of Regents' *Statewide Student Transfer Guide and Articulation Matrix* are transferable to other public four-year universities and two-year colleges in the state of Louisiana. This publication is available for use at the Board of Regents' website at www.regents.state.la.us . Courses taught by instructors holding a master's degree may be transferable. Student(s) should check with the receiving institution concerning these courses